

Notice of Allowability

Application No.

10/672,751

Examiner

Anthony Gutierrez

Applicant(s)

VAN RIEL ET AL.

Art Unit

2857

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed 11/8/04.
2. ☒ The allowed claim(s) is/are 1-68.
3. ☒ The drawings filed on 26 September 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/817,807.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

Allowable Subject Matter

1. Claims 1-68 are allowed.
2. The following is an examiner's statement of reasons for allowance:

In view of the Applicant's response filed 11/8/04, providing clarification as to the meaning of particular claim language previously rejected under 35 USC 112, 2nd paragraph, with respect to claims 1-32, 65, 67, and 68, the Applicant's claimed invention is deemed allowable over the prior art as the prior art fails to teach or fairly suggest a method for determining from measured reflection data on a plurality of trace positions one or more subsurface parameters, said method comprising specifying a wavelet or wavelet field for each of partial or full stacks of the measured reflection data; calculating synthetic reflection data based on specified wavelets and initial subsurface parameters; and optimizing an objective function, comprising the weighted difference between measured reflection data and synthetic reflection data for a plurality of trace positions simultaneously.

With respect to claims 33-64, and 66, the Applicant's claimed invention is deemed allowable over the prior art as the prior art fails to teach or fairly suggest a method for determining from measured reflection data on one or more trace positions a plurality of subsurface parameters, said method comprising specifying a wavelet or wavelet field for each of partial or full stacks of the measured reflection data; calculating synthetic reflection data based on specified wavelets and initial subsurface parameters; and simultaneously optimizing an objective function, comprising the

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weighted difference between measured reflection data and synthetic reflection data for said plurality of subsurface and for each trace position separately or for a plurality of subsurface parameters and one or more stabilization terms and/or one or more correction terms.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. None of the references listed below have a priority date that is earlier than the earliest priority date of the present application.

US Patent 6,757,217 B2 discloses a method for time aligning multiple offset seismic data volumes.

US Patent 6,675,097 B2 discloses a method of nonlinear constrained inversion to determine base of salt interface from gravity and gravity tensor data.

US Patent Application Publication US 2004/0215396 A1 discloses a method of processing seismic data sequences obtained at substantially the same time at locations spatially separated from one another.

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US Patent Application Publication US 2004/0199330 A1 discloses a method and apparatus for simultaneous inversion for source wavelet and AVO parameters from prestack seismic data.

US Patent Application Publication US 2003/0050767 A1 discloses a method for noise reducing/resolution enhancing signal processing using discrete wave minimization and maximization.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Gutierrez whose telephone number is (571) 272-2215. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc Hoff can be reached on (571) 272-2216. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Anthony Gutierrez

12/2/04


MARC S. HOFF
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800